

ABSTRACT

A terminal structure of a superconducting cable is provided that is capable of preventing degradation in airtightness of a seal provided on the boundary between a room-temperature side and a cryogenic side for a long-term use. The terminal structure includes a terminal of a superconducting cable $[(100)]$, a bushing $[(10)]$ providing electrical conduction with a superconducting conductor $[(100a)]$ of the cable $[(100)]$, and a refrigerant bath $[(11)]$ housing the terminal and the bushing $[(10)]$. The refrigerant bath $[(11)]$ includes a liquid nitrogen layer $[(13)]$ in its cryogenic side and a nitrogen gas layer $[(14)]$ in its room-temperature side that are adjacent to each other. In the nitrogen gas layer $[(14)]$, distance t between an inner surface $[(11a)]$ of the refrigerant bath $[(11)]$ and an outer periphery of the bushing $[(10)]$ is dimensioned such that nitrogen gas is kept in a gaseous state without being pressurized by a pressurizer and respective pressures of nitrogen gas and liquid nitrogen counterbalance each other.